

# 13th AEC AIR CLEANING CONFERENCE

## SESSION I

### WELCOME AND OBJECTIVES OF THE CONFERENCE

Monday, August 12, 1974  
CHAIRMAN: A. F. Perge

WELCOME	Donald E. Reardon
WELCOME	Dade W. Moeller
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### WELCOME

Donald E. Reardon  
U.S. Atomic Energy Commission  
San Francisco, California

On behalf of the Atomic Energy Commission and particularly the San Francisco Operations Office, I am delighted to welcome each and every one of you to the 13th USAEC Air Cleaning Conference.

This Conference, as you know, is sponsored by the Harvard Air Cleaning Laboratory, the Lawrence Berkeley Laboratory, and the Atomic Energy Commission.

It is my understanding that past conferences have met with overwhelming success and proven to be especially valuable to the AEC, to the laboratories, and to the industry both nationally and internationally. I share with you the expectations of equal success this week. The program outlined for Sessions 1 through 12 will be presented by speakers from far and wide and the subjects covered are equally far-ranging. Likewise, the city you are in has residents from far and wide and its diversity is also far-ranging. When both the agenda for the Conference and the host city are as compatible as they are this year, I am confident that the time you spend here will be both profitable and pleasurable.

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### WELCOME

Dade W. Moeller  
Harvard Air Cleaning Laboratory  
Harvard School of Public Health  
Boston, Massachusetts

It is my pleasure to join in welcoming you to the 13th USAEC Air Cleaning Conference. On behalf of the Harvard Air Cleaning Laboratory, let me say that it is particularly pleasant to return to the west coast for such a meeting. Many of you, I am sure, recall the 11th Conference which was held in Richland, Washington, in 1970.

A significant item in terms of this Conference is the attendance and participation by air cleaning experts from such a wide range of organizations. These include specialists from consulting firms, public utilities, reactor vendors, research laboratories, the national laboratories, governmental agencies, and educational institutions, both from the United States and abroad. With respect to the latter group, papers are being presented at this Conference by experts from Canada, the Federal Republic of Germany, Great Britain, Japan, and Yugoslavia. Representatives from several additional countries are also in attendance, including air cleaning specialists from France, Mexico, Spain, and Sweden. To our foreign guests, we extend a most cordial welcome and we hope you will enjoy your stay both professionally and socially.

As Dr. First has told you, the Proceedings of this Conference will be published. In addition, we have again been invited to prepare a digest of the meeting for publication in the Journal, NUCLEAR SAFETY. Suffice it to say, these Conferences are today recognized as providing the most comprehensive coverage of air cleaning activities anywhere. Because of their informality and the promotion of active debate in the discussion sessions, the Conferences also serve as a forum for the expression of diverse opinions and the seeking of resolution of controversial matters pertaining to the field. Those of us who have had a part in planning this meeting owe a debt of gratitude to each of you for contributing to its excellence.

On behalf of the Harvard Air Cleaning Laboratory, I am pleased to acknowledge the leadership shown by the U.S. Atomic Energy Commission in serving as primary sponsor of this forum. Although there are several who are responsible for this continuing role on the part of the AEC, special appreciation is due Alex Perge, Humphrey Gilbert, and Jack Dempsey, whose support has been invaluable. In like fashion, as Dr. First mentioned, a particular note of thanks is due Mr. Jensen Young of the Lawrence Berkeley Laboratory, who handled the myriad details associated with local arrangements for the meeting. Finally, it is a pleasure to acknowledge the contributions of Professor Melvin W. First, my colleague at the Harvard Air Cleaning Laboratory, who, as Chairman of the Conference, has devoted many

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hours to assure its success. Dr. First also led the Program Committee in arranging the final agenda for the Conference.

From all of us to all of you, let me extend a most cordial welcome to this, the 13th USAEC Air Cleaning Conference. It is a pleasure to have you here.

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## WELCOME

Andrew M. Sessler  
Director  
Lawrence Berkeley Laboratory  
Berkeley, California

On behalf of the Lawrence Berkeley Laboratory, I extend a warm welcome to you at this, the 13th USAEC Air Cleaning Conference. I would like to extend a special welcome to our foreign delegates, who are here from Canada, Mexico, England, Spain, France, Germany, Japan, Sweden, Yugoslavia, and perhaps some other countries.

The work of you people has set the standards for all air cleaning systems in the nuclear industry everywhere in the world. High Efficiency Particulate Air filters (HEPA) and charcoal adsorbers are now commonplace in all stack exhaust systems. Without a doubt, due to your leadership, research and engineering skills, air pollution from nuclear facilities has been maintained well within the stringent guidelines set forth by the AEC.

The advent of the National Environment Protection Act (NEPA), however, has focused the attention of the nation, and the world, on cleaner and cleaner stack exhausts. Further research and advanced engineering skills are required to capture and monitor the elusive radioactive gaseous contaminants, such as the noble gases, methyl iodide, and tritium. I note that in the program for this convention, over 40% of the papers are devoted to these subjects. I feel confident that in the years ahead, you and your co-workers will achieve the goal set forth by recent AEC regulations to reduce all pollutants to the "lowest practical levels."

Before you get down to work, and speaking for your local hosts, let me make some general remarks. San Francisco is an interesting city to visit. North of the city, the Golden Gate Bridge spans the strait connecting San Francisco Bay to the Pacific Ocean. You ought to cross the bridge--in just 10 miles, you will encounter redwood groves and other scenic wonders. To the east, the Bay Bridge connects the city to other metropolitan communities, such as Berkeley, the home of the University of California and the Lawrence Berkeley Laboratory. I hope many of you get an opportunity to visit us there.

The population of San Francisco is around 700,000 people of wide ethnic backgrounds. We think San Francisco is one of the most cosmopolitan cities in the United States and, perhaps, after some days here, you will agree.

I noticed in your program that no evening sessions are planned. This should allow you time to partake of the many attractions in San

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Francisco. Cable cars, the only mobile national historical landmarks, provide transportation over many of the picturesque hills. The city has over 2,600 restaurants to serve you with a wide variety of cuisine. You can find excellent ones to fit any budget. Shopping areas abound, and entertainment varies from the risqué night life to civic light opera, museums and spectator sports.

I hope that you will enjoy your stay in San Francisco, take advantage of the opportunity to interact with co-workers from all over the world, and find profitable the conference program which has been assembled for you.

Finally, this is the first time, since it originated at Harvard in 1951, that this conference has been held in San Francisco. I hope that you will return before another 20 years pass!

Thank you.

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## OBJECTIVES OF CONFERENCE

Alex F. Perge  
Deputy Director  
Division of Waste Management and Transportation  
U. S. Atomic Energy Commission  
August 12, 1974

Now that you have been welcomed to the 13th AEC Air Cleaning Conference, I will take a few minutes to outline the objectives of the meeting. The basic objective of this Conference is the exchange of information. This is not new as the 12 preceding conferences had this same objective. However, the communication of ideas between individuals especially those working on the same or similar projects, and keeping up with the information explosion is the most vital concern of the technical world today.

"Exchange of information" is much too simple a phrase, so let me amplify its meaning and outline some of the areas that it covers in this Conference.

First, the Conference is a forum where national and international representatives of government and industry atomic energy programs can communicate their air cleaning requirements. As time passes and we understand our problems better, the air cleaning requirements appear to become more complex. To give you some examples, can we rely for a long period of time on the impregnants currently used on carbon to trap methyl iodide? Have we done more than scratch the surface in devising methods to collect radioactive noble gases? With the increase in waste coming from nuclear operations, how can we reduce the volume of used filters, spent carbon, and collected gases? These are questions for which the nuclear business needs answers.

Secondly, the Conference is a forum where research results can be reviewed with the researcher firsthand and constructive criticism provided on the spot. Such firsthand review of research is most important. If by this review the researcher can be directed better to the goal of the research project, and unnecessary or duplicative research identified, the Air Cleaning Conference is well worth the cost, both in terms of manpower and financial support. One year is not sufficient time for significant results of scientific inquiry to come into focus. Therefore, it is appropriate that AEC Air Cleaning Conferences are held at two-year intervals.

Thirdly, the Conference is a forum where informal communication can be carried on in addition to the papers presented in formal sessions. I want to stress the importance of informal interchange between one investigator and another and between suppliers and users of hardware for nuclear air cleaning. Equally important at these Conferences are the informal groups that assemble to discuss specific problems concerning filters and carbon. These get-togethers provide ideal environments to promote solutions to problems and to update air cleaning methods at individual locations.

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Fourth, identification of programs, and especially individuals working in an area of development with which you are concerned, is most important. This makes possible the continuation of information exchange between meetings and when new problems arise. Knowing that a specific individual is working in a certain area and that an approach to solving your problem might be obtained by consulting with that person should greatly accelerate the solution of nuclear facility airborne waste needs.

Finally, the objectives of these Conferences are well recognized in the AEC, from my division which sponsors this Conference, to the AEC General Manager who approves it. This is borne out by the fact that this is the 13th such conference. These conferences have made valuable contributions toward improving air cleaning in the national atomic energy program and the spin-off to the regulated nuclear industry is equally encouraging. Each of you has contributed and communicated significant advances in air cleaning technology. The proceedings issued following each conference serve as ideal references on aerosols and air cleaning technology.

I trust that these meetings will continue in future years.